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10/582,925	04/13/2007	**Manuel Otto**	2003P01013WOUS	9205

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EXAMINER	
JENNISON, BRIAN W	

ART UNIT	PAPER NUMBER
3742	

NOTIFICATION DATE	DELIVERY MODE
11/16/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/582,925	OTTO ET AL.	
	Examiner	Art Unit	
	BRIAN JENNISON	3742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 July 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *13-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *13-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Response to Arguments

1. Applicant's arguments, see page 1, filed 7/8/2009, with respect to claims 15 and 18 have been fully considered and are persuasive. The 112 2nd paragraph of claims 15 and 18 has been withdrawn.

2. Applicant's arguments filed 7/8/2009 have been fully considered but they are not persuasive. See Remarks below.

In regards to applicant's arguments on pages 10-11 referencing claims 13-15 and 23: subtraction of voltage and current is not stated in the claim only comparing the difference by using an evaluation circuit. In Cage, the threshold detector will use a difference circuit since it is comparing signals to activate the trigger generators. **See Column 3, Lines 15-40.** Referencing the current senor means: The means is not specified and based on the claim language any part of the device which current runs through and may be measured through including a resistor since a resistor is easily and commonly used to sense current through. On pages 12-13 of the reply in regards to the first detector means. The resistor 37 provides a current which can be used in as a part of a difference signal.

In regards to applicant's arguments on pages 13-14 referencing claim 24: the new limitation of the difference signal is used in Gava since two signals are compared and a difference is used. The difference signal is formed out of a current through a change in

resistance in a heating element. The current signal in the heating element may be used for any type of signal again, the voltage is not within the claim limitations.

3. In response to applicant's arguments on pages 14-15 regarding claims 16-21 against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 13-15, 22-23 and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by Cage et al (US 4,198,957).

Cage teaches:

Regarding Claims 13, 23, 25: A circuit arrangement for protecting from overheating a heating element **(13 which may be used for fluids)** whose resistance value is a function of its temperature, the circuit arrangement comprising:

a switch means;

a power supply **(27)** coupled to the heating element for supplying a current to the heating element **(13)** by means of the switch means **(21, 23)**;

a switch control circuit **(47)** with an output for controlling the switch means **(21, 23)** such that the switch means is switched to a conducting state when the switch control circuit is in a first state and the switch means is switched to a non-conducting state when the switch control circuit is in a second state; **(Column 4, Lines 1-17)**

a current sensor means coupled to the heating element, the output of the current sensor providing a signal proportional to the current flowing through the heating element **(A resistor 37 may be tapped for measuring current and provides a signal proportional to the heating element.)** .;

a first scaling means **(31)** whose output provides a signal proportional to the supply voltage of the heating element;

a first detector means **(39, 41)** having inputs each coupled to an output of a respective one of the current sensor means and the first scaling means, the first detector means having an output that provides a difference signal formed from the signals of the current sensor means and the scaling means; and **(Fig 1 shows the inputs coupled to the resistor 37 and will provide a difference signal at its output.)**

an evaluation circuit **(43 can be used to compare the differential signal from the detector means 39, 41)** operable to compare the difference signal determined by the first detector means with a reference signal, the switch control circuit being operatively connected to the evaluation circuit such that the switch control circuit can be switched

from the first state into the second state by the evaluation circuit. **(43 can be used to change the switch control circuit 47 from the first state to second state.)**

Regarding Claim 14: The first scaling means 31 and current detector 37 have the same magnitude as the heating element 13. **See Fig 1.**

Regarding Claim 15: The detector 39, 41 is capable of detecting a difference voltage only in the event of a resistance change in the heating element 13.

Regarding Claim 22: The heating element may be a layer of electrically conductive material with a cross section sufficient enough to be self supporting. This may be a thick film paste. The heating element has a negative temperature coefficient wherein the temperature rises with resistance. **See Column 2, Lines 25-45.**

6. Claim 24 is rejected under 35 U.S.C. 102(b) as being anticipated by Gava et al (EP 0 579 947) as cited by applicant.

Gava teaches:

Regarding Claim 24: A method for protecting a heating device **(heating element 3)** for water damage in which the resistance is a function of its temperature and the change in resistance is detected and compared with a reference signal in order to interrupt the heating circuit via a switching means **(21)** if necessary. (**See Abstract,**

Column 4, Lines 11-54 and fig.2) two signals are compared and a difference is used. The difference signal is formed out of a current through a change in resistance in a heating element.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 16-17, 19, 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cage in view of Luy et al (US 4,035,692).

The teachings of Cage have been discussed above.

Cage fails to teach:

Regarding Claim 16: The circuit arrangement, wherein the evaluation circuit comprises a second detector means with two inputs and one output, wherein the output signal of the first detector means can be supplied to one input and the reference signal can be supplied to the other input, and wherein the output forms the output of the evaluation circuit.

Regarding Claim 17: The circuit arrangement wherein the evaluation circuit has a second scaling means which is used to set the reference signal.

Regarding Claim 19: The circuit arrangement wherein the output of the second detector means is fed back to the input.

Regarding Claim 21: The circuit arrangement wherein the switch means is a relay that becomes operative in the first state of the switch control circuit when the heating element is operating correctly.

Luy et al teaches:

Regarding Claim 16: Fig 1 shows the second detector of OP2 with two inputs +, - and one output. Fig 1 shows the output of OP1 supplied to an input of OP2 and forms and output of an evaluation circuit.

Regarding Claim 17: Fig 1 shows a second scaling means from R5 and the POT, which is input as a reference signal to OP2.

Regarding Claim 19: Fig 1 shows the output of OP2 fed back to an input by way of R8.

Regarding Claim 21: Relay CR1 is a switch operative in a first open state when the device is operating correctly. **See Fig 1 and Column 5, Lines 12-30.**

In view of Luy et al's teachings it would have been obvious to one of ordinary skill in the art at the time of the invention to include with the teachings of Cage, the second detector, second scaling means, feedback loop and relay since Luy teaches the OP2 for comparing an input signal with a reference signal, the scaling circuit for controlling the gain of OP2, the feedback loop to trigger the amplifier, and the relay for performing a protective function.

9. Claims 18, 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cage as modified by Luy in further view of Abe et al (US 4,516,543).

The teachings of Cage as modified by Luy have been discussed above.

Cage also teaches:

Regarding Claim 20: The AC power supply shown in Fig 1.

Cage as modified by Luy fails to teach:

Regarding Claim 18: The circuit arrangement wherein the second scaling means is coupled to the supply voltage acting upon the heating element to derive the reference signal from the supply voltage.

Regarding Claim 20: The circuit arrangement wherein and a rectifier arrangement and a smoothing circuit are connected between the first and the second detector means.

Abe teaches:

Regarding Claim 18: Fig 1 shows a second scaling means before OP Amp 34 at the negative terminal which derives a reference signal from the power supply at ST. With the power supply at ST being coupled to the heating element 63.

Regarding Claim 20: Fig 1 shows a first detector 15 and second detector 79 with a smoothing circuit of 78 and a capacitor connected in parallel and a rectifier 81 between the two.

In view of the teachings of Abe, it would have been obvious to one of ordinary skill in the art at the time of the invention to include with the teachings of Cage as modified by Luy the second scaling means coupled to the power supply, the smoothing circuit and rectifier since, Abe teaches a rectifier for keeping the output at a low level, the resistor and capacitor in parallel for smoothing the signal, and the second scaling means coupled to the power supply for providing a reference voltage to the comparator.

Conclusion

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRIAN JENNISON whose telephone number is (571)270-5930. The examiner can normally be reached on M-Th 7:00AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tu Hoang can be reached on 571-272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/BRIAN JENNISON/
Examiner, Art Unit 3742

11/5/2009

/TU B HOANG/

Supervisory Patent Examiner, Art Unit 3742